

Three new species of the genus *Alycosmesis* (Acari: Terpnacaridae) from South Africa

by

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Introduced by M. K. P. Meyer

Notes on the genus *Alycosmesis* are given together with the description of 3 new species, viz. *A. retiformis*, *A. granuliformis* and *A. corallium*.

Mites of this family are poorly known and this is the first record of them from Africa. The species described in this paper were collected from debris under *Acacia* and *Eucalyptus* trees but they are also known to occur in hard, dry clayey soil.

The type material of the species described in this paper is deposited in the collections of the Institute for Zoological Research, Potchefstroom University.

ALYCOSMESIS Grandjean

Alycosmesis Grandjean, 1939: 1-122.

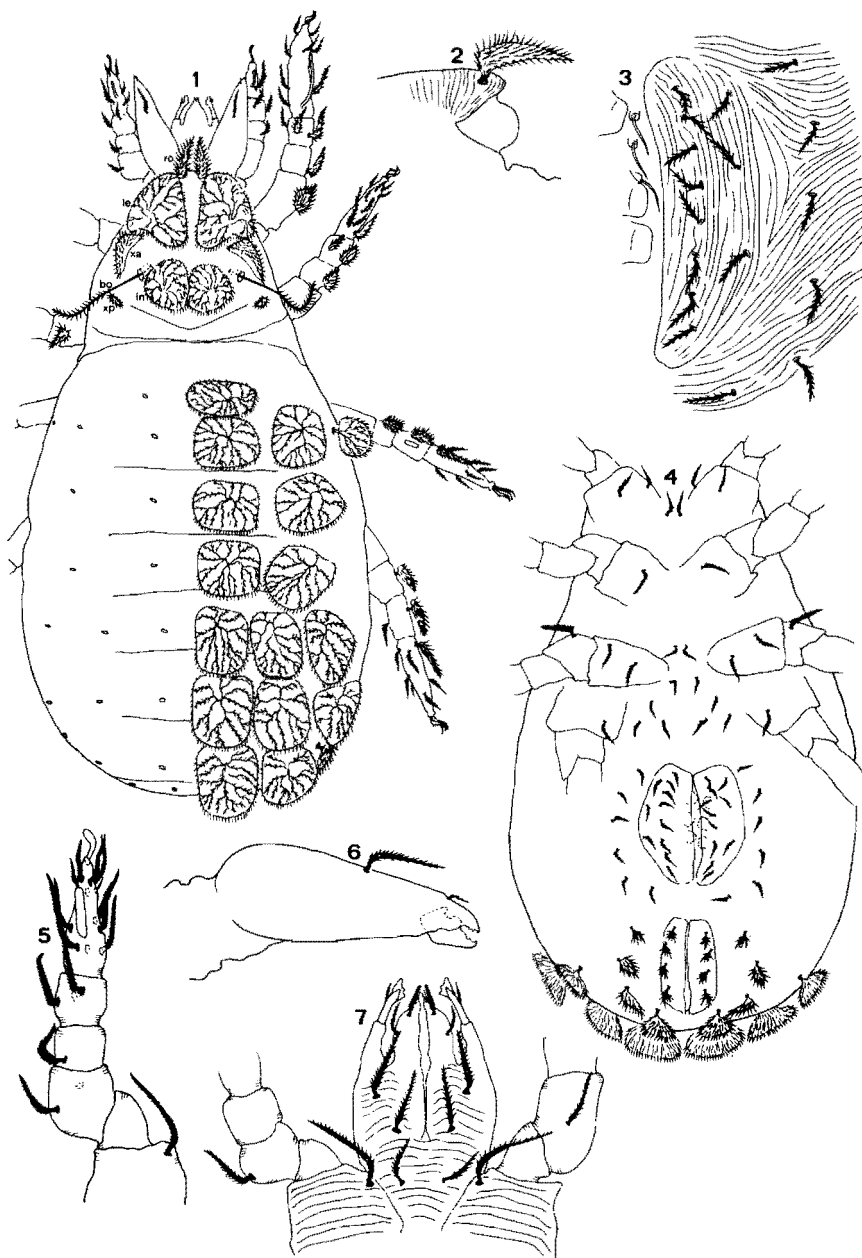
Sebaia (in part) Oudemans, 1904: 171; Thor & Willmann, 1941: 150.

These are very small mites (less than 190 μm in total length) and are white to yellowish in colour when preserved in 70% ethanol; propodosoma with 5 pairs of setae viz. *ro*, *le*, *xa*, *xp* and *in* as well as one pair of sensilla (*bo*); naso large and with an unpaired eye on the ventral surface; no lateral eyes; integument with transverse striations; hysterosoma 7 segmented; body setae large, leaf-like and representing the holotrichous condition; rutella (ectomalae) prominent; chelicerae chelate-dentate; adults with 3 pairs of genital papillae; femur I is partly divided; fourth pair of legs not adapted for jumping.

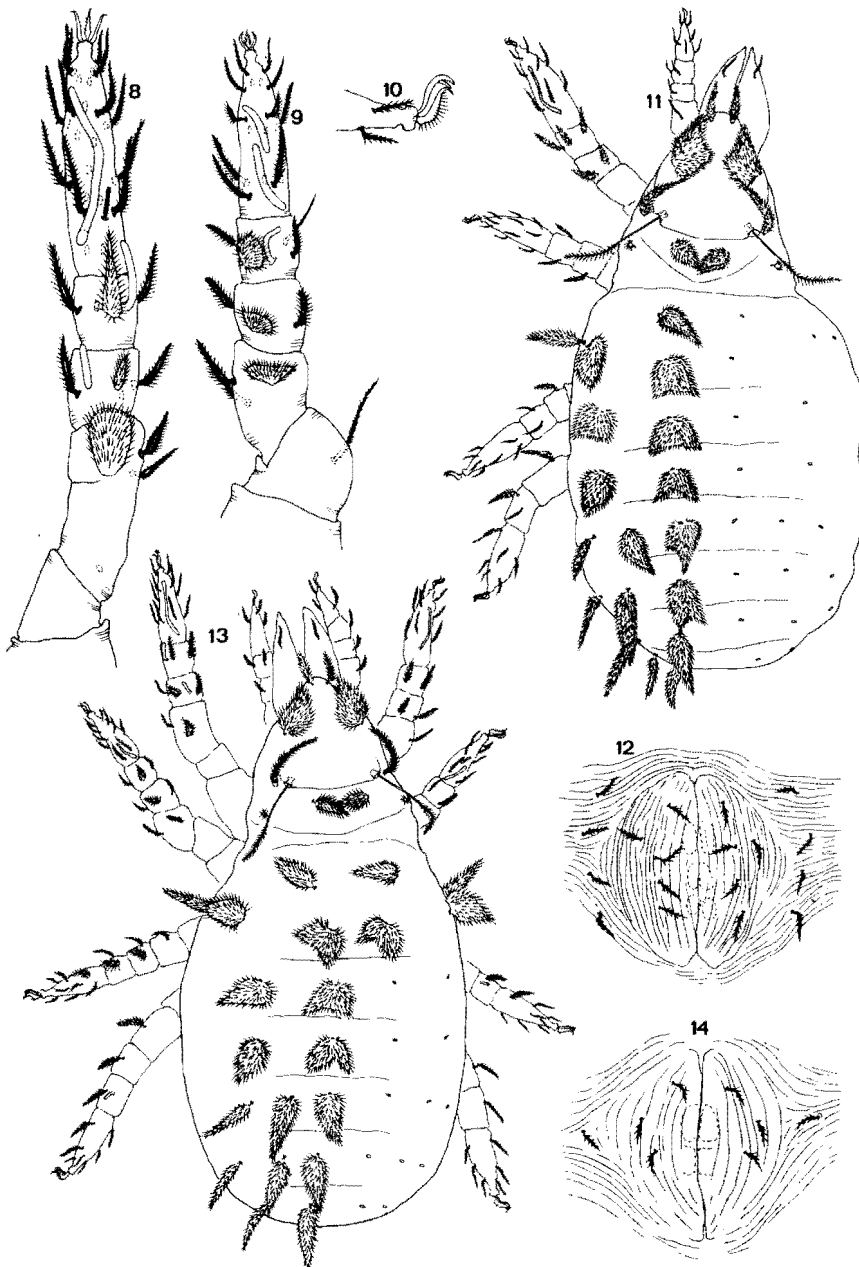
Type-species: *Sebaia palmata* Oudemans, 1904.

Key to the South African species of *Alycosmesis*

1. Body setae decorated with fine ridges forming a veined pattern; tarsi I and II with one and two obtuse solenidia respectively. **retiformis** spec. nov.
- Body setae decorated with numerous small granules; tarsi I and II each with 2 obtuse solenidia. **granuliformis** spec. nov.
- Body setae decorated with numerous nodular projections; tarsi I and II each with one obtuse solenidium. **corallium** spec. nov.



Figs 1-7. *Alycosmesis retiformis* spec. nov., female. 1. Dorsum. 2. Naso with median eye, lateral view. 3. Genital field. 4. Venter. 5. Palp. 6. Chelicera. 7. Hypognathum.



Figs 8–14. *Alycosmesis retiformis* spec. nov. 8. Leg I, female. 9. Leg II, female. 10. Ambulacrum, female. 11. Dorsum, tritonymph. 12. Genital field, tritonymph. 13. Dorsum, deutonymph. 14. Genital field, deutonymph.

***Alycosmesis retiformis* spec. nov., figs 1-14 and 23.**

FEMALE (figs 1-10 and 23). Dimensions: length of body (incl. gnathosoma) 189-190 μm ; length of body (excl. gnathosoma) 159-160 μm ; breadth of body 86-87 μm ; leg I 80-83 μm ; leg II 65-67 μm ; leg III 65-67 μm and leg IV 80-83 μm .

Dorsum (figs 1-2 and 23). The propodosoma and hysterosoma (fig. 1) are separated by a sejugal furrow. The triangular propodosoma tapers into a naso which is difficult to detect in dorsal view. A large lenslike median eye is present on the underside of the naso (fig. 2). Setae *ro* are located on the naso. Setae *le* and *in* are flattened and leaf-shaped whilst setae *xa* and *xp* are much smaller and elongate. Sensilla *bo* are filamentous and densely ciliate in the anterior half. The slightly elongate hysterosoma is almost completely concealed by the 19 pairs of large leaf-shaped setae which are transversely arranged. This species can be distinguished from *A. granuliformis* and *A. corallum* on account of the veiny pattern formed on the flattened surface of these setae (fig. 23). The hysterosoma is divided into 7 segments by 6 transverse sutures. The integument is covered by fine transverse striae.

Venter (figs 3-4). The coxae are arranged in two groups. The genital field (fig. 3) is well defined. Three pairs of papillae are present and each cover bears 11 pilose setae of which eight are situated in a row next to the genital slit with the remaining three situated more laterally. Six pairs of pilose paragenital setae and three pairs of nude, internal setae are present. One paratype female bears an unpaired fourth internal seta. There is no ovipositor. One paratype female carries an egg which is 62 μm long. Four pairs of anal and four pairs of para-anal setae are present (fig. 4). Five pairs of setae are present in the area between the two posterior pairs of coxae.

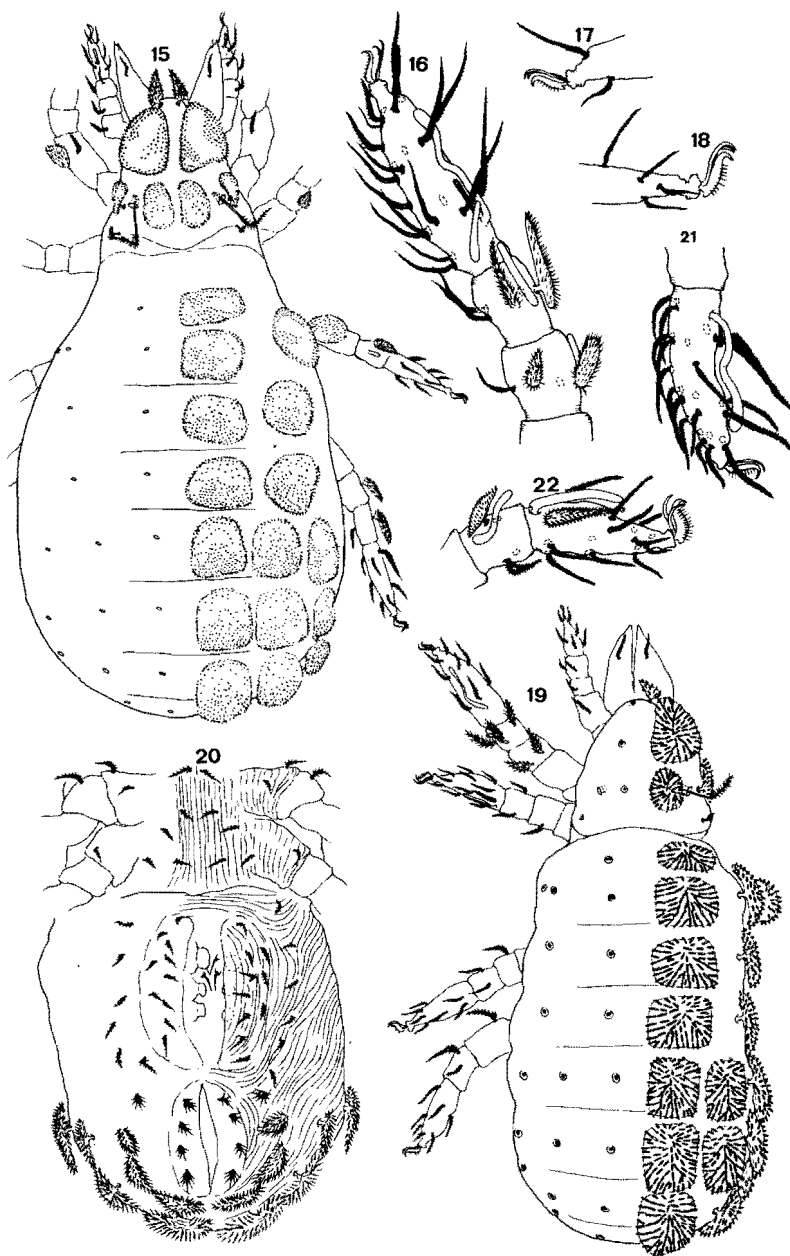
Gnathosoma (figs 5-7). The pedipalpi (fig. 5) are composed of the normal six segments. The palpal tarsus bears 11 plumose setae, one small nude seta, one obtuse solenidion and one yatagan-shaped, terminal solenidion. The chelicerae (fig. 6) are bulky with opposed, dentate chelae and with two dorsally situated setae. The hypognathum (fig. 7) bears 4 pairs of pilose setae as well as 2 pairs of adoral setae. The anterior pair of adoral setae is very small and nude whilst the posterior pair is robust and truncate. The ectomalae are large, each terminating in a flattened plane for cutting and with a sharp lateral projection.

Legs (figs 8-10). Femur I is only partly divided. Tarsus I (fig. 8) bears one very long, curved solenidion as well as one peglike famulus. The solenidia on the other leg segments are all obtuse and of a moderate length. The counts for the setae of the leg segments are (with the sensory setae in parentheses): tarsi 22(2)-16(2)-15-13; tibiae 5(1)-4(1)-3(1)-3(1); genua 4(1)-3-2-3; femora 4-3-4-4; trochanters 0-1-2-0; coxae 2-1-2-1. Some of the ordinary leg setae especially the posterodorsal ones, are enlarged to some extent (figs 8-9). The ambulacrum is composed of a curved empodium which bears about 15 fine rays on each side as well as 2 slender, curved claws (fig. 10). Empodium I is obviously smaller than the other.

MALE. Unknown

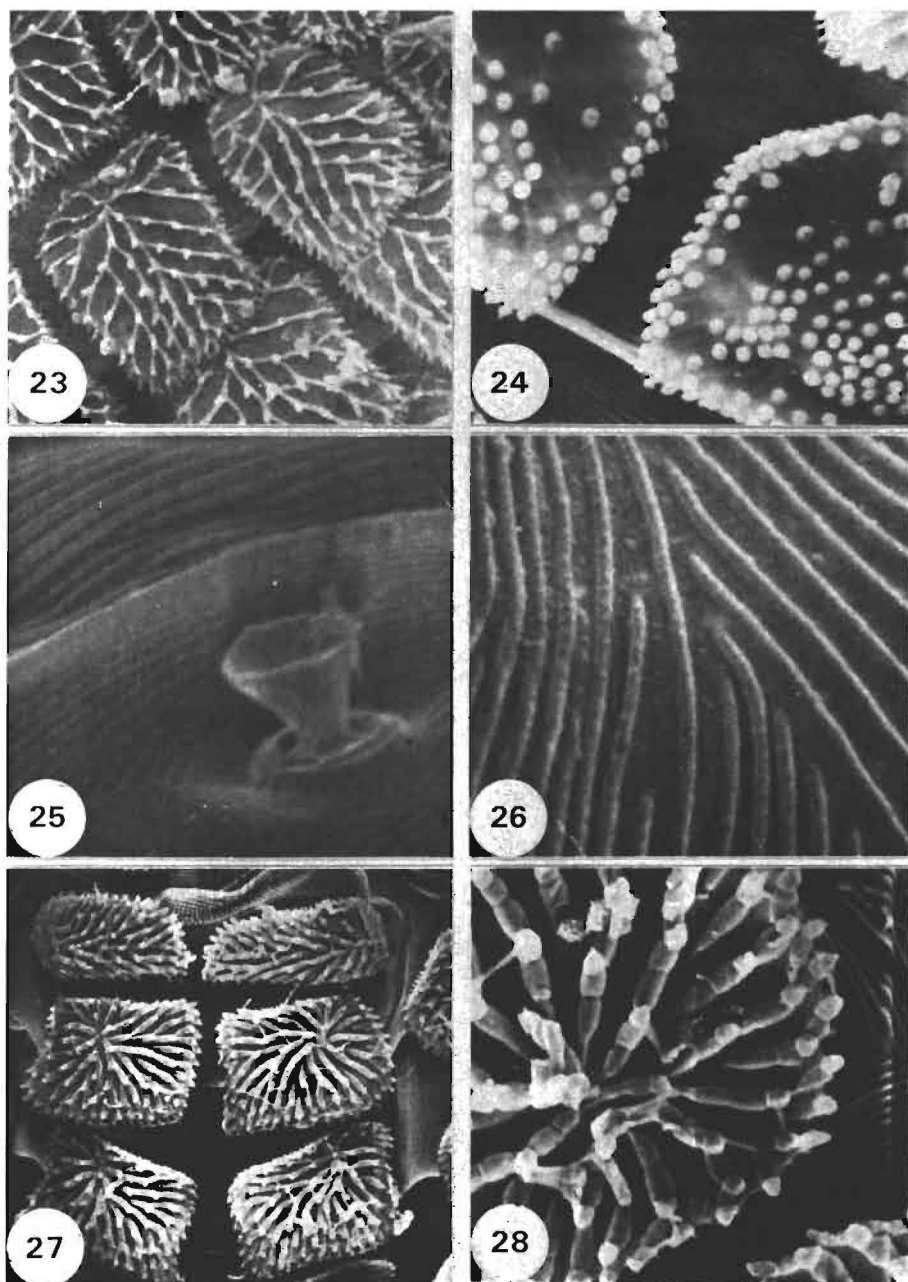
TRITONYMPH (figs 11-12). Dimensions: length of body (incl. gnathosoma) 171-177 μm ; length of body (excl. gnathosoma) 149-153 μm ; breadth of body 76-81 μm .

Although the tritonymph bears the same number of setae as the adult it can easily be distinguished from the latter by the shape and ornamentation of the body setae (fig. 11).



Figs 15-18. *Alycosmesis granuliformis* spec. nov., female. 15. Dorsum. 16. Genu, tibia & tarsus I. 17. Ambulacrum, tarsus I. 18. Ambulacrum, tarsus II.

Figs 19-22. *Alycosmesis corallium* spec. nov., female. 19. Dorsum. 20. Venter. 21. Tarsus I. 22. Tarsus II.



Figs 23-28. *Alycosmesis* species, scanning electron photomicrographs. 23-24. Hysterosomal setae of female. 23. *A. retiformis*, X2000. 24. *A. granuliformis*, X5000. 25-26. *A. granuliformis*. 25 seta base, X19000. 26. Dorsal integument, X10000. 27-28. *A. corallium*, hysterosomal setae of female. 27. X3400. 28. X6000.

The setae lack the veined ornamentation of the adult but are provided with numerous small spines thus resembling those of the adults of *A. palmata* Grandjean. A dehiscence furrow is prominent laterally on the propodosoma. Five pairs of genital and 4 pairs of paragenital setae are present (fig. 12). The hypognathum bears 5 pairs of setae including the 2 pairs of adorals. The pedipalpi are identical to those of the adults. The counts for the setae of the leg segments are (with the sensory setae in parentheses): tarsi 21(2)–15(2)–14–13; tibiae 5(1)–4(1)–3(1)–3(1); genua 3(1)–3–2–2; femora 3–2–3–4; trochanters 0–0–1–0; coxae 2–1–2–1.

DEUTONYMPH (figs 13–14). Dimensions: length of body (incl. gnathosoma) 171–174 μm ; length of body (excl. gnathosoma) 146–150 μm ; breadth of body 71–74 μm .

Dorsally, the hysterosoma bears 16 pairs of leaf-shaped setae. The humeral pair as well as the posteriorly situated setae are somewhat elongate, whilst the rest are broad and apparently composed of two parts (fig. 13). Setae *le* and *in* are more tapered than those of the adult and setae *xa* are elongate and plumose. Three pairs of genital setae, one pair of paragenital setae and two pairs of papillae are present (fig. 14). The hypognathum bears 4 pairs of setae including the 2 pairs of adorals. The counts for the setae of the leg segments are (with the sensory setae in parentheses): tarsi 19(2)–15(2)–14–11; tibiae 5(1)–4(1)–3(1)–4(1); genua 3(1)–3–2–2; femora 3–3–2–2; trochanters 0–0–1–0; coxae 1–1–2–1. All femora are complete.

MATERIAL EXAMINED. ♀ – Holotype, 7 ♀ – paratypes, 2 paratype tritonymphae and 2 paratype deutonymphae collected from dry pasture soil covered with furrow-weed (*Cynodon dactylon*), Potchefstroom, Tvl., xi–xii, 1969, P. D. Theron; 3 ♀ – paratypes collected from debris under bluegum trees (*Eucalyptus globulus*) Jan Kempdorp, C.P., 19.i.1972, P. D. Theron.

***Alycosmesis granuliformis* spec. nov., figs 15–18 and 24–26**

FEMALE. Dimensions: length of body (incl. gnathosoma) 186–190 μm ; length of body (excl. gnathosoma) 167–172 μm ; breadth of body 87–89 μm .

Dorsally, this species bears the same number of setae as *A. retiformis* and can only be distinguished from the latter by the granular appearance of the body setae (figs 15 and 24). As shown in fig. 25 these setae are borne on short, cup-shaped stalks. As in *A. retiformis* the integument is provided with fine, transverse striae (fig. 26). The ventral aspects, including that of the gnathosoma, are similar to those of *A. retiformis*. The females are provided with 3 pairs of internal genital setae but as in *A. retiformis* one of the paratype females is provided with a fourth unpaired seta. The chaetotaxy of the legs is, with one exception, similar to that of *A. retiformis*. Tarsus I (fig. 16) bears 22 ordinary setae, 2 obtuse solenidia and one peglike famulus. Empodium I (fig. 17) is obviously smaller than those of the other legs (fig. 18).

MATERIAL EXAMINED. ♀ – Holotype and 19 paratype females collected from debris under *Acacia baileyana*, Potchefstroom, Tvl., x. 1970, P. D. Theron.

***Alycosmesis corallium* spec. nov., figs 19–22 and 27–28.**

FEMALE. Dimensions: length of body (incl. gnathosoma) 154–162 μm ; length of body (excl. gnathosoma) 141–147 μm ; breadth of body 79–83 μm .

As in the other two species the prodorsum is covered by 6 pairs of setae and the dorsal hysterosoma by 19 pairs. The large leaf-like setae are ornamented by numerous nodular projections. The genital opening is relatively large and is surrounded by 6 pairs of paragenital setae. Each genital cover bears 10 setae of which 7 are situated in a row next to the genital slit and with the remaining three situated more laterally. Three pairs of genital papillae are present. Two pairs of small nude setae are present internally between the first and second pairs of papillae. Four pairs of anal setae and four pairs of para-anals are present. The palpal tarsus differs from that of the other 2 species by the absence of the small nude seta. The characteristics of the hypognathum and chelicerae are identical to those of the other 2 species. Tarsus I bears one long, curved, obtuse solenidion and one peglike famulus. Tarsus II as well as all the tibiae and genu I each bear a single obtuse solenidion. The counts for the ordinary leg setae are identical to those of *A. retiformis* and *A. granuliformis*. Femur IV is only partly divided.

MATERIAL EXAMINED. ♀ – Holotype and 12 ♀ – paratypes collected from debris under bluegum trees (*Eucalyptus globulus*) Jan Kempdorp, C.P. 19.i.1972, P. D. Theron.

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